

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of

Request by Progeny LMS, LLC for Waiver
of Certain Multilateration Location and
Monitoring Service Rules

Progeny LMS, LLC Demonstration of
Compliance with Section 90.353(d) of the
Commission's Rules

WT Docket No. 11-49

**REPLY COMMENTS OF GOOGLE INC.
IN SUPPORT OF PETITIONS FOR RECONSIDERATION**

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August 2, 2013

When it authorized Progeny M-LMS, LLC to commence commercial operations, the Commission changed the rights and responsibilities of licensed and unlicensed users in the 902-928 MHz band.¹ Because the Order altered the meaning of a Commission rule without public notice and opportunity for comment, and without even admitting the change, it violates the Administrative Procedure Act (APA).²

Beyond this procedural defect, the Order does real, practical harm. Unlicensed users, just as much as licensed users, must be able to rely on the Commission's adherence to its rules. By disregarding unlicensed users' investment-backed expectations and reliance, the Order — if not reversed — will discourage future deployment of equipment and services in the 902-928 MHz band³ and elsewhere.

Unlicensed use of spectrum contributes tens of billions of dollars to the United States economy,⁴ and is increasing at an astounding rate.⁵ The Commission's rules for unlicensed spectrum have allowed millions of users to make investments in new, risky, or lower-cost technologies that individually are relatively small, but collectively are very large. For example, hundreds of millions of devices operate in the 902-928 MHz

¹ *Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules; Progeny LMS, LLC Demonstration of Compliance with Section 90.353(d) of the Commission's Rules*, Order, WT Docket No. 11-49 (rel. June 6, 2013) ("Order").

² 5 U.S.C. § 706.

³ Progeny holds primary licenses to 8 MHz of spectrum between 902 and 928 MHz. Order at ¶ 2.

⁴ Mark Cooper, *Efficiency Gains and Consumer Benefits of Unlicensed Access to the Public Airwaves*, at 21-24 & Ex. IV-2 (Jan. 2012) ("Cooper"); Richard Thanki, *The Economic Significance of Licence-Exempt Spectrum to the Future of the Internet*, at 35-36 (June 2012) ("Thanki").

⁵ For example, the sale of Wi-Fi routers has sustained a compound average growth rate of more than 30% for almost a decade. Cooper at 10. Wi-Fi is just one example; a huge variety of unlicensed applications have proliferated over the last three decades, including Bluetooth devices, baby monitors, garage door openers, smart grid operations, inventory control systems, wireless broadband access, and health monitoring systems. See Cooper at 7; Thanki at 19 (discussing recent growth in demand for unlicensed devices more generally).

band alone.⁶ The Institute of Electrical and Electronics Engineers (IEEE) and the Wi-Fi Alliance have also invested significant resources to develop a version of Wi-Fi called 802.11ah, which is suitable for operation at 902-928 MHz. The 802.11ah standard enjoys widespread support from the Wi-Fi industry and holds the potential to unlock a new wave of mobile-to-mobile communication in this band.⁷ These levels of investment can be sustained only within a predictable and stable regulatory framework, which the Order undermines.

BACKGROUND

1. Google's Interest in the Proceeding

Google offers a variety of products and services that utilize wireless communications — including laptops, tablets, mobile operating systems, cloud-based services, VoIP services, and maps. Google depends on access to robust licensed services as well as robust unlicensed spectrum resources in order to reach its end users. Accordingly, Google has long advocated for a balanced spectrum policy that recognizes the benefits of enabling both licensed and unlicensed access.

Google has particularly focused on unlicensed spectrum as a platform for innovation. For example, Google recently received Commission certification for its TV white spaces database, which enables unlicensed access to unused spectrum in the television broadcast bands.⁸ Unlicensed access allows entrepreneurs and innovators to design novel services and equipment that can “be introduced into the marketplace

⁶ Letter from Laura Stefani, Counsel for the Part 15 Coalition, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-49 (filed May 1, 2013) at 2-3 (“Part 15 Coalition Letter”).

⁷ See *IEEE 802.11ah: Advantages in Standards and Further Challenges for Sub 1 GHz Wi-Fi*, <http://goo.gl/leAeos> (last visited Aug. 1, 2013).

⁸ Public Notice, *Office of Engineering and Technology Announces the Approval of Google, Inc.'s TV Bands Database System for Operation*, ET Docket No. 04-186 (rel. June 28, 2013).

rather quickly,”⁹ providing an important complement to more stable, licensed services that require longer-term, larger investments.

2. The Commission’s Departure from Precedent

Progeny obtained its licenses subject to a condition requiring it “to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to 47 CFR part 15 [i.e., unlicensed] devices.”¹⁰ Progeny attempted to carry that burden by testing its systems with just three unlicensed users of the 902-928 MHz band, even though unlicensed devices of vastly varying uses and characteristics rely on the band for operation.¹¹ Even these limited tests revealed Progeny’s operations would preclude unlicensed use of Progeny’s spectrum at least 80% of the time,¹² with wireless broadband devices experiencing a throughput reduction of 50% or more when they can function at all.¹³ Despite the inadequacy of Progeny’s testing and its dismal results, the Commission, on June 6, allowed Progeny to go forward with commercial operations.¹⁴ Diverse parties have petitioned for reconsideration.¹⁵

⁹ Kenneth R. Carter, Ahmed Lahjouji, & Neal McNeil, FCC, *Unlicensed and Unshackled: A Joint OSP-OET White Paper on Unlicensed Devices and Their Regulatory Issues*, OSP Working Paper Series, at 5 (May 2003).

¹⁰ 47 C.F.R. § 90.353(d) (adopted by *Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicular Monitoring Systems*, 10 FCC Rcd. 4695 (1995) (“LMS Report and Order”)). Progeny obtained its licenses in an auction in 1999. Order at ¶ 13 & n.37.

¹¹ Part 15 Coalition Letter.

¹² See Comments of the Wireless Internet Service Providers Association (WISPA), WT Docket No. 11-49, at 4, 7 (filed Dec. 21, 2012).

¹³ *Id.* at 4-6.

¹⁴ See Order.

¹⁵ Petition for Reconsideration of the Part 15 Coalition, WT Docket No. 11-49 (filed July 8, 2013); Petition for Reconsideration of WISPA, WT Docket No. 11-49 (filed July 8, 2013) (WISPA Petition); Petition for Reconsideration of Silver Spring Networks, Inc., WT Docket No. 11-49 (filed July 8, 2013); Petition for Reconsideration of Plantronics, Inc., WT Docket No. 11-49 (filed

ARGUMENT

1. The Order Effectively Amends Rule 90.353(d) in Violation of the Administrative Procedure Act

Prior to the Order, the Commission's rules protected unlicensed users from unacceptable levels of interference in the 902-928 MHz band.¹⁶ When it established that policy, the Commission explained that it intended to "provide certainty to *all users* of the band," and to "afford [secondary] users . . . a greater degree of protection to their operations."¹⁷ In a 1996 reconsideration order, the Commission elaborated that the testing requirement would ensure that "LMS systems are not operated in such a manner as to degrade, obstruct or interrupt Part 15 [unlicensed] devices to such an extent that Part 15 devices will be negatively affected."

Fifteen years later, when granting a waiver of certain M-LMS rules, the Commission reiterated that Progeny must demonstrate compliance with the prohibition on unacceptable interference through cooperative field testing.¹⁸ The Commission further made clear that it sought to "maintain coexistence of the many varied users of the band, including Part 15 users."¹⁹

Providers of unlicensed devices and services thus invested in the 902-928 MHz band with a well-founded expectation that they could rely on the protections of section 90.353(d). Yet the recent Order departed abruptly from that policy. While governing

July 8, 2013); Petition for Reconsideration of the Utility Trade Associations, WT Docket No. 11-49 (filed July 8, 2013); and Petition for Reconsideration, and Petition to Deny of Skybridge Spectrum Foundation, et. al, WT Docket No. 11-49 (filed July 8, 2013).

¹⁶ 47 C.F.R. § 90.353(d).

¹⁷ LMS Report and Order at ¶ 11 (emphasis added).

¹⁸ *Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, Order, 26 FCC Rcd. 16878, ¶ 25 (2011) ("Waiver Order").

¹⁹ *Id.*

precedent requires Progeny to demonstrate through field testing that it will not cause unacceptable levels of interference to Part 15 users operating in the band, the Commission held in the Order — without acknowledging that it was changing any rule — that Progeny can meet its burden so long as it *minimizes* the potential for M-LMS interference to Part 15 operations overall.²⁰ Even if some (or many) existing or planned unlicensed applications in the 902-928 MHz band cannot operate because of Progeny, that interference may not rise to an unacceptable level.²¹

In places, moreover, the Order suggests that Progeny can secure approval to operate by showing no more than that it considered interference mitigation in designing its system.²² That cannot be right, for if Progeny's attempts to minimize interference through system design could alone satisfy Rule 90.353(d), then field testing would not be mandatory.

More broadly, the Commission seemed intent on rolling back history in the 902-928 MHz band, and placing the band within the general rules for licensed and unlicensed operation that have not applied to this particular spectrum since 1995. The Commission explained that the Order “seek[s] consistency with the Commission’s clear and repeated pronouncements that unlicensed devices in the 902-928 MHz band operate under the Part 15 rules that offer no protection from harmful interference.”²³ The general principle that unlicensed operations are not entitled to protection from harmful interference does not, however, square the Commission’s Order with the

²⁰ Order at ¶ 19.

²¹ *Id.* at nn. 59, 62.

²² *Id.* at ¶ 20.

²³ Order at ¶ 19.

particular license condition that applies to Progeny's service, which protects unlicensed users.²⁴

The Commission is allowed to recalibrate the balance between licensed and unlicensed users that it has struck specifically in the 902-928 MHz band. But to do so, the Commission must undertake a rulemaking in which the public can comment on the contemplated recalibration.²⁵ The Commission's failure in this case to give notice and to solicit public comment renders the Order a violation of the Administrative Procedure Act.²⁶

2. The Order Will Deter Investment in Products and Services that Depend on Unlicensed Spectrum

Beyond its legal flaws, the Order threatens to do lasting harm in the marketplace. Users of the 902-928 MHz band have stated that the Order creates significant confusion as to what constitutes an unacceptable level of interference to unlicensed operations and leaves other critical issues, such as the extent of Progeny's permitted operations, unresolved.²⁷ These uncertainties will deter the development of new licensed and unlicensed technologies that could make use of the band.

The threat to unlicensed use of the band is particularly great. The Order repeatedly cites the general rule that individual unlicensed users have no interference

²⁴ See, e.g., *id.* at ¶¶ 11 (noting that the M-LMS rules do not modify Part 15 rules), 19, 22 (stating that unlicensed users are not entitled to interference protection that "well exceeds their Part 15 status").

²⁵ See *CBS Inc. Petition for Special Relief*, 87 F.C.C.2d 587, ¶ 22 (1981).

²⁶ *Sprint Corp. v. FCC*, 315 F.3d 369, 374 (2003) ("[N]ew rules that work substantive changes in prior regulations are subject to the APA's procedures.").

²⁷ WISPA Petition at 9-11; Reply of the Part 15 Coalition to Petitions for Reconsideration, WT Docket No. 11-49 (filed Aug. 2, 2013), at 7-10.

protection from licensed co-frequency operation.²⁸ Although it is true that unlicensed users must accept interference “that may be caused by the operation of an authorized radio station,”²⁹ it is not true that unlicensed users must accept interference when a licensed operator exceeds the scope of its authorizations. To adopt and maintain a codified rule requiring a licensee to protect unlicensed uses, but contradictorily declare that unlicensed services are secondary to all of the same licensee’s operations, signals to unlicensed users that their investments in technology and equipment are unsafe. If the rules regarding operation of unlicensed services and primary or adjacent licensed services can be changed arbitrarily and without due process, unlicensed users will lose confidence in the Commission and its regulations.

The Commission rightly recognizes that unlicensed access to spectrum has unleashed a wave of innovation in new wireless services,³⁰ and it is conducting three major proceedings to free up additional spectrum for unlicensed access.³¹ Even as the Commission seeks to increase unlicensed resources, though, this Order threatens future investment in unlicensed services.

²⁸ See, e.g., Order at ¶¶ 7, 11, 18-20.

²⁹ 47 C.F.R. § 15.5(b).

³⁰ See, e.g., *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Notice of Proposed Rulemaking, 27 FCC Rcd. 12357, ¶¶ 227-28 (2012) (discussing Commission’s history of supporting unlicensed use).

³¹ See *id.*; *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Notice of Proposed Rulemaking and Order, 27 FCC Rcd. 15594 (2012); *Revision of Part 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, Notice of Proposed Rulemaking, 28 FCC Rcd. 1769 (2013).

CONCLUSION

For the reasons set forth above, the Commission should vacate the order allowing Progeny to commence operations without prejudice to Progeny renewing its request after additional testing or modification of its contemplated system.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Austin Schlick", is positioned above a horizontal line.

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August 2, 2013

Certificate of Service

I, Sybil Anne Strimbu, certify that on this day, August 2, 2013, I served copies of the foregoing Reply Comments of Google Inc. in Support of Petitions for Reconsideration via U.S. mail, postage prepaid, on the following persons:

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